In re Patent Application of:
KNIGHT ET AL.
Serial No. **10/828,584**
Filing Date: **April 21, 2004**
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REMARKS

Claims 1-54 remain in this application. No claims have been cancelled. Claims 1 and 28 have been amended. New claims 55 and 56 are added.

Applicants thank the Examiner for the detailed study of the application and prior art and note the indication of allowable subject matter for claims 2-4, 6-8, 29-31 and 33-35 and the allowance of claims 14-27 and 14-54.

The remaining independent claims 1 and 28 and dependent claims 5, 9-13, 32 and 36-40 have been rejected as anticipated by U.S. Patent No. 4,068,160 to Hunt.

At the outset, Applicants have added new claims 55 and 56 directed respectively to the assigned probability value based on the transfer function (allowable subject matter from dependent claim 6) and the use of Digital Terrain Elevation Data (DTED) (allowable subject matter from dependent claim 8).

The rejected independent claims 1 and 28 are now amended to recite that the processor receives the elevation slope, magnetic and gravity data sets and applies the gravity and magnetic data sets to the elevation slope data set <u>as matrices</u> in a transfer function to link the elevation slope data set to a likely presence of oil or mineral deposits.

The use of matrices as now claimed is novel and unobvious over Hunt, since disparate data sets can now be combined in a combination function as a transfer function.

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Matrix manipulation, for example, linear algebra, can provide

indicators for large volumes of technically collected data. A

linear combination of different matrices such as elevation

slope, gravity and magnetic data sets using coefficients such

as shown in FIG. 11 can be applied.

At most, Hunt teaches a system that determines

various intensities of a magnetic field and gravitational

field at predetermined surface locations preselected along a

predetermined line of survey. A subset of surface locations

is established and correlated to gravitational field

intensity. Intensities can be filtered and correlated, and

correlated again based on a second subset. When the threshold

is exceeded, then a membership for various values is included.

Hunt does not use matrix calculations or a transfer function

as in the claimed invention.

There is no teaching or suggestion for using

matrices in a transfer function as now set forth in the

instant Amendment. The matrices as now presented with the

amended claims provide for the multi-dimensional combination

of data even as disparate data values and determinate

mathematics determine the likely presence of oil or mineral

deposits. A vector-based prediction algorithm can be used

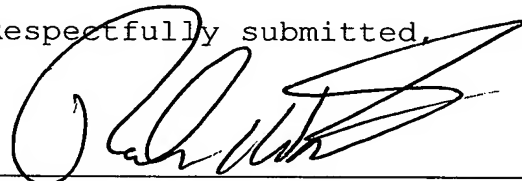with matrices, which is not taught or suggested by Hunt.

Applicants contend that the present case is in

condition for allowance and respectfully requests that the

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Examiner issue a Notice of Allowance and Issue Fee Due. If
the Examiner has any questions or suggestions for placing this
case in condition for allowance, the undersigned attorney
would appreciate a telephone call.
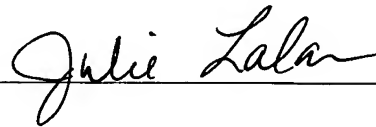
Respectfully submitted,

RICHARD K. WARTHER
Reg. No. 32,180
Allen, Dyer, Doppelt, Milbrath
    & Gilchrist, P.A.
255 S. Orange Avenue, Suite 1401
Post Office Box 3791
Orlando, Florida 32802
Phone: 407-841-2330

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22313-1450,** on this _12th_ day of July, 2006.